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## ABSTRACT

IMPROVEMENTS IN OR RELATING TO AN ELECTRON GUN AND AN  
ELECTRON BEAM WINDOW

5           An electron beam window 20 is formed with six diamond panes 21 to  
transmit an electron beam 15. The panes 21 are formed in a cylindrical disc 17  
of single crystal or of polycrystalline diamond such that each pane 21 is  
surrounded by a thicker integral peripheral rim 22 which conducts heat away  
from the panes 21. A heat sink ring 35 can be fitted to the outer cylindrical  
10 surface of the peripheral rim 22. A scanning means 36 indexes the electron  
beam 15 sequentially through each pane 21. The use of diamond panes  
reduces the electron beam energy converted to heat in each pane 21, the  
thicker peripheral rim 22 increases cooling of the panes 21, and the scanning  
movement 37 reduces the temperature rise of the panes 21.

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Figure 4